

According to the first Office Action, claim 23 has been canceled, and claim 1 and other claims have been amended. To make the claims clear and easy to read, new version of the claim section is enclosed, and other sections remain the same as the substitute specification filed on February 28, 2002.

Remarks on the Patentability of the Amended Claims

Claim 1 recites that

a valve system positioned inside the hollow casing.

Referring to the applicant's description on page 7, line 6-9, "The valve system 30 (e.g., a standard tire valve core such as a Schrader valve) is placed in the high pressure fluid inlet side of the casing 10 by a threaded adapter 20. The seal portion 34 of the valve system 30 preferably is firmly tightened against the seat 22 inside the adapter 20."

This configuration of the valve system ensures that any forces acting on the valve, especially the force produced by the high pressure supply source, will be transferred to the casing, and will not affect the function of other components such as the piston.

Claim 1 further recites that

wherein the valve system is actuated by the conduit which moves longitudinally with the pressure-sensing structure in response to the pressure differential between the two sides of the pressure-sensing structure, capable of preventing the force produced by the pressure source from transferring to the pressure-sensing structure when the valve system is in close state.

Referring to the applicant's description on page 9, line 8-12, "As the pressure in the receiving object approaches the predetermined pressure value, the piston 50 is gradually forced to move away from the valve stem 36. Consequently, the valve 32 gradually returns to its normally closed position and eventually terminates the inflation process as shown in Fig. 3."

This mechanism of valve control further ensures that after the valve is closed, the piston is physically separated from the high pressure supply source. That is, the valve can not only shut off the fluid flow, but also prevent the force produced by the high pressure supply source from transferring to the piston. Therefore, the balance of the piston is independent of the pressure of the supply source. The piston is balanced between the force produced by the tire pressure and the force from the pressure-generating structure, and thus the tire pressure can be accurately preset by adjusting the bias force of the pressure-generating structure no matter whatever supply pressure will be used.

Richards does not teach, disclose, or suggest such configuration and mechanism of the valve system. Instead, Richards discloses a secondary normally closed valve mounted to the piston, and the valve always moves with the piston as shown in Fig. 1 and 3 of Richards's patent specification. The high pressure of supply source will be acting on both piston and valve all the time. Especially after the valve is closed, the balance of the piston is determined not only by the tire pressure and spring force, but also by the high pressure of the supply source. This extra force produced by the high pressure of the supply source will be directly applied on the valve with the piston and will unavoidably cause error in the tire pressure. This error cannot be predetermined and corrected if the supply pressure varies or different supply sources will be used. When the supply pressure is significantly high, the intensive dynamic flow will force the valve close as soon as the high pressure is applied, and lead to a malfunction of the inflation.

The combination of Richards with any other references does not teach, disclose, or suggest the same configuration and mechanism of the valve system as claimed by the applicant.

Similarly, neither Lutes nor the combination of Lutes with any other references teach, disclose, or suggest the applicant's configuration and mechanism of the valve system that can not only shut off the fluid flow but also prevent the force produced by the pressure source from transferring to the pressure-sensing structure.

For the above reasons, the applicant respectfully submits that claim 1 is novel, involves an inventive step, and has industrial applicability, so are the remaining claims due to dependency. If any issue remains and the resolution of which can be achieved by a telephone conference, the Examiner is invited to contact the Applicant at the number indicated below.

Respectfully submitted,



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Enclosure:

1. Amended claims due to the 1st OA
2. Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address
3. Office Action Summary